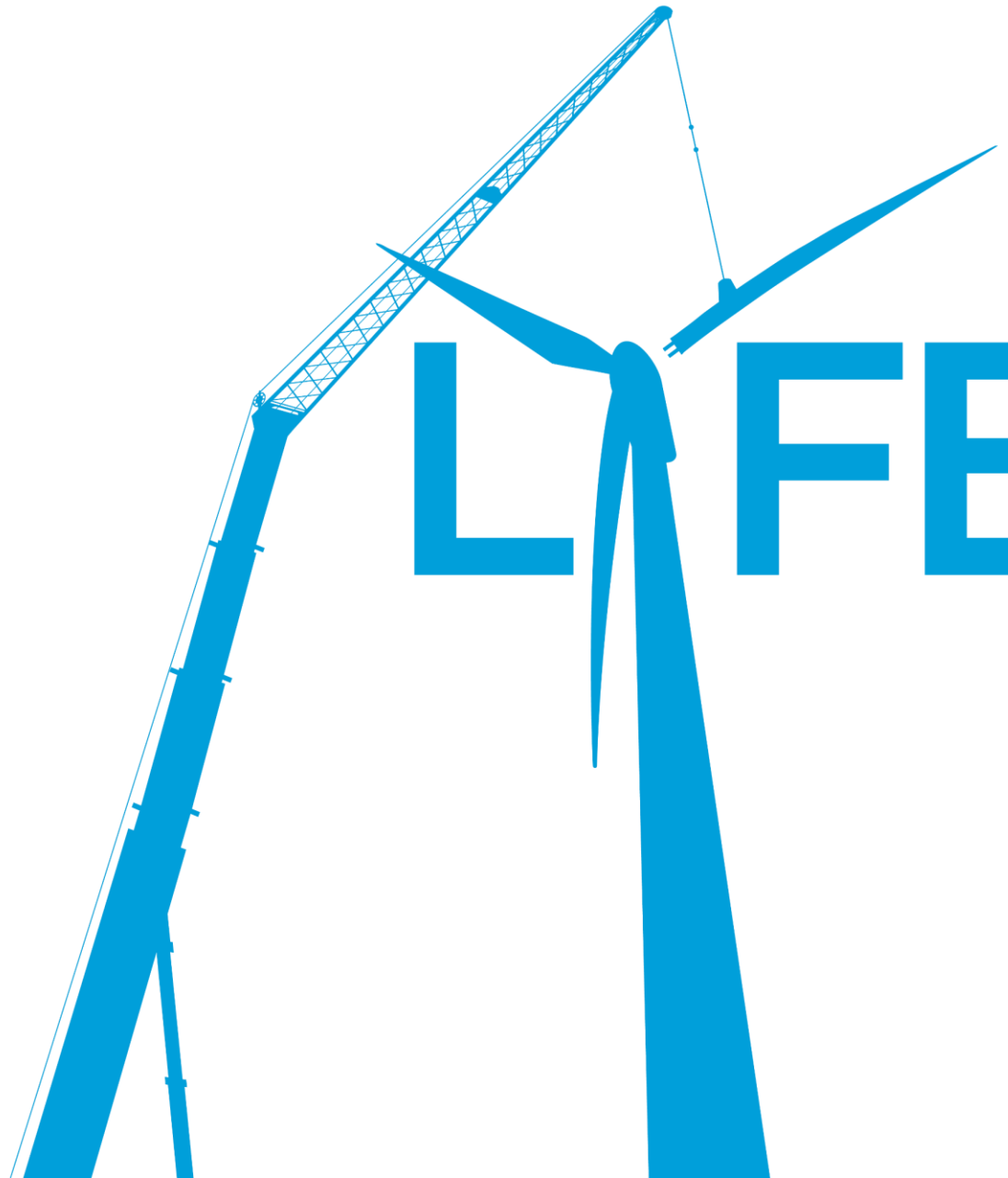


LIFEYARDS

Heading towards decarbonized heat

Luca Rigoni

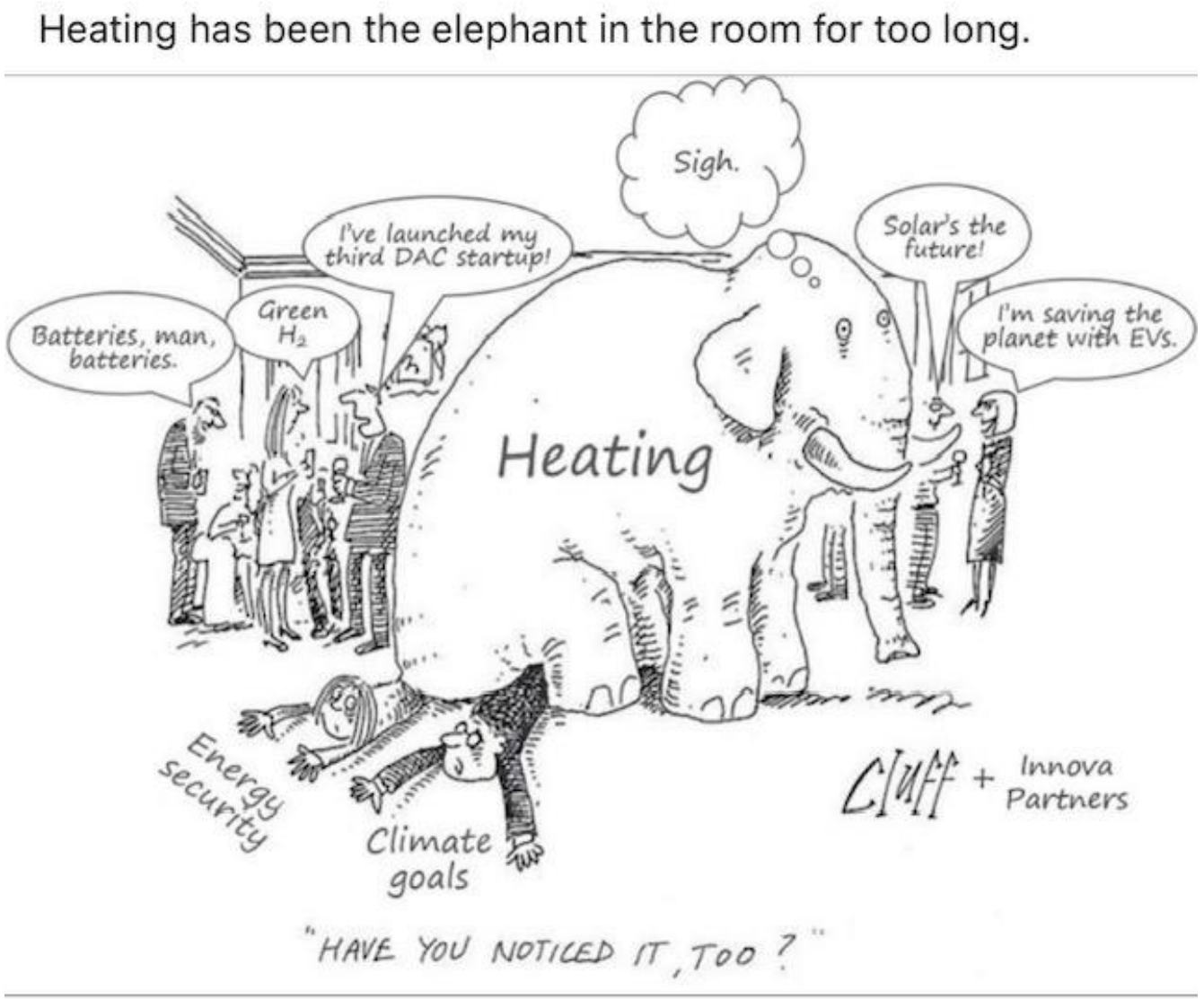
CEO of A2A Calore e Servizi

October 2025

a2a LIFE COMPANY

The Heating Problem

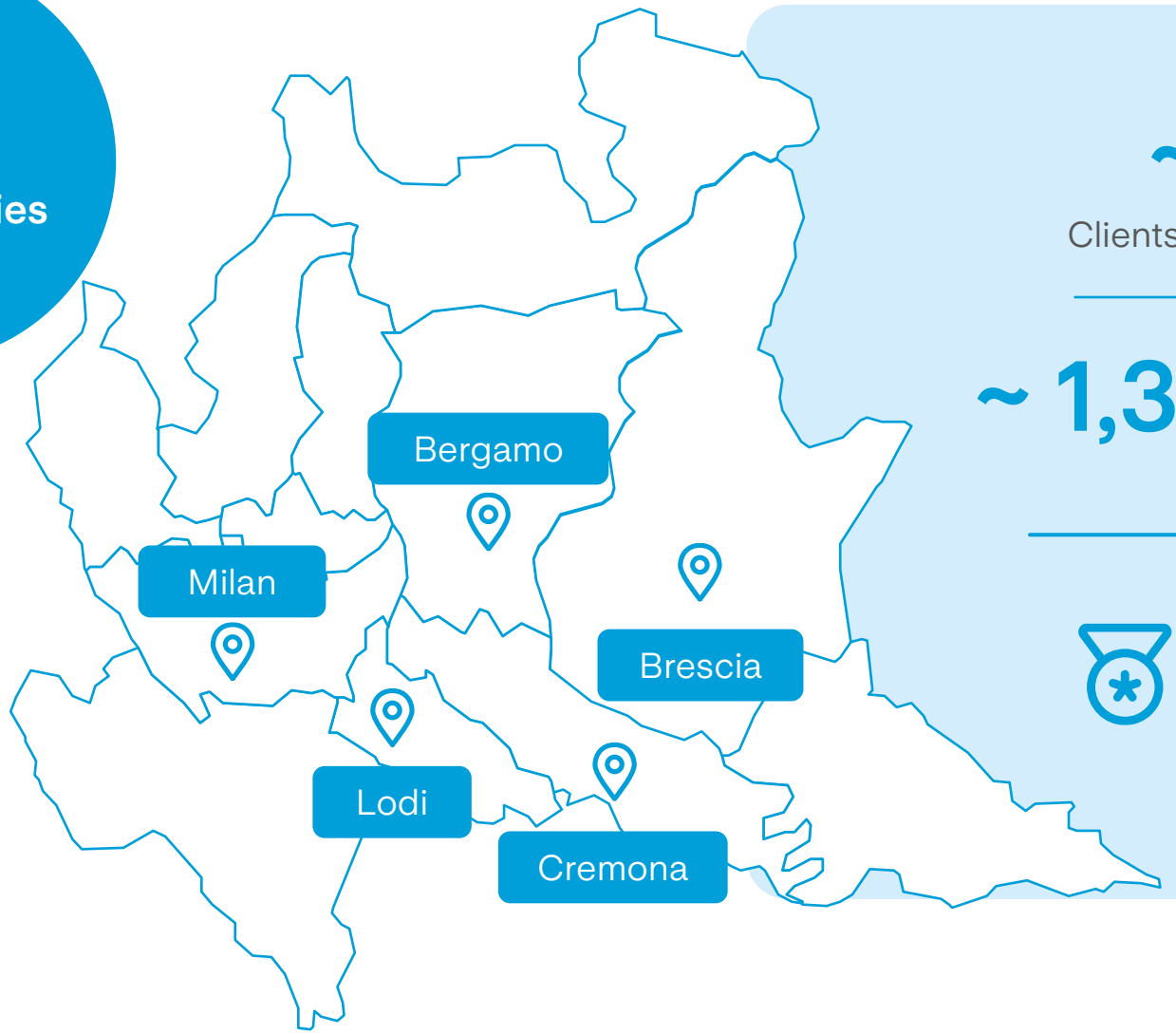
OUR TARGET IS TO DECARBONIZE THE **HEATING ELEPHANT**!!!



a2a LIFE COMPANY

A2A District Heating – 2024 Snapshot

16
Municipalities



~ 27 k
Clients connected

118 Mm³
Heated volumes

~ 1,300 Km
DH network

~500 k
Inhabitants eq. served

Leading operator

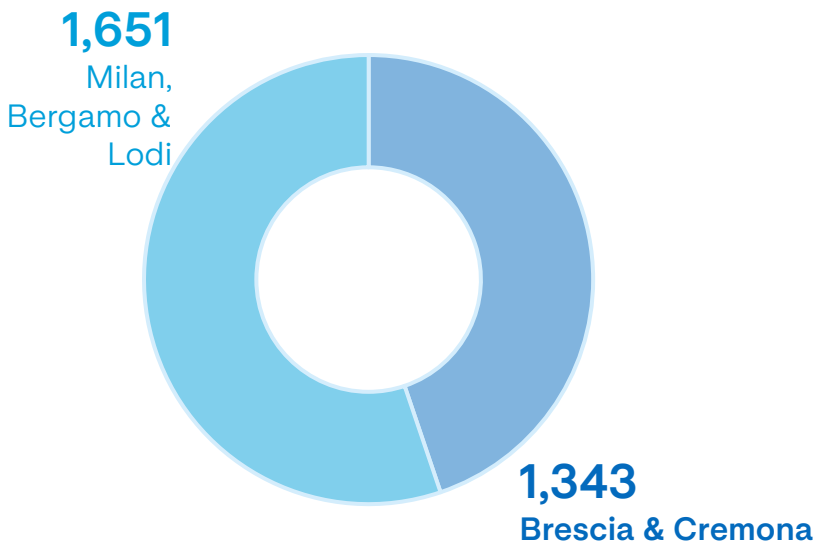
in district heating for heat distributed and network length

with room for further expansion and decarbonization opportunities

a2a LIFE COMPANY

A2A District Heating Production Mix

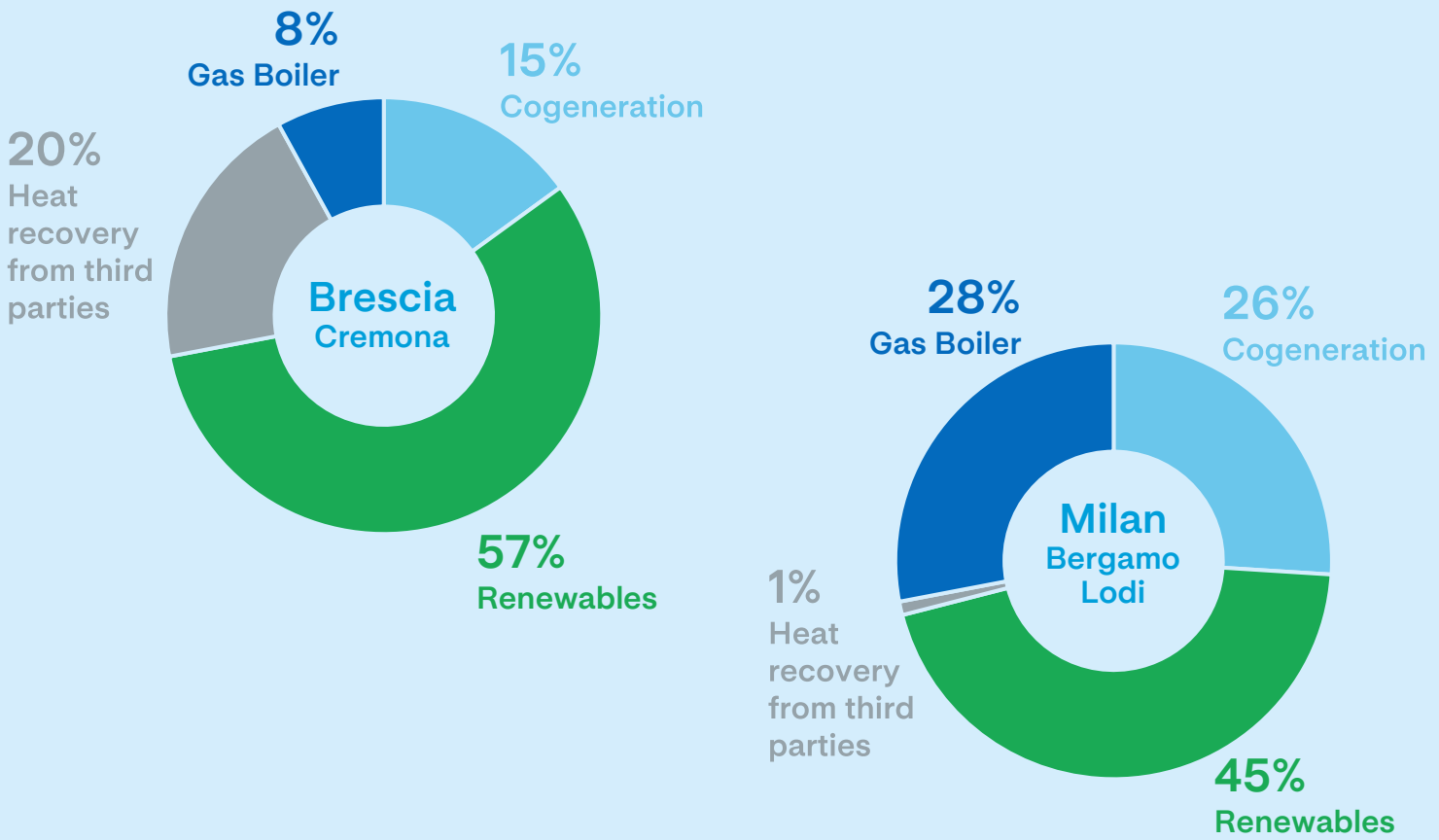
Distributed heat in 2024 (GWh_t)



>70%

Production from cogeneration, renewables and heat recovery

A2A Production Mix



A2A District heating: focus on Brescia

First system in Italy, heading towards decarbonization

~ 20.5k
Clients connected

43 Mm³
Heated volumes

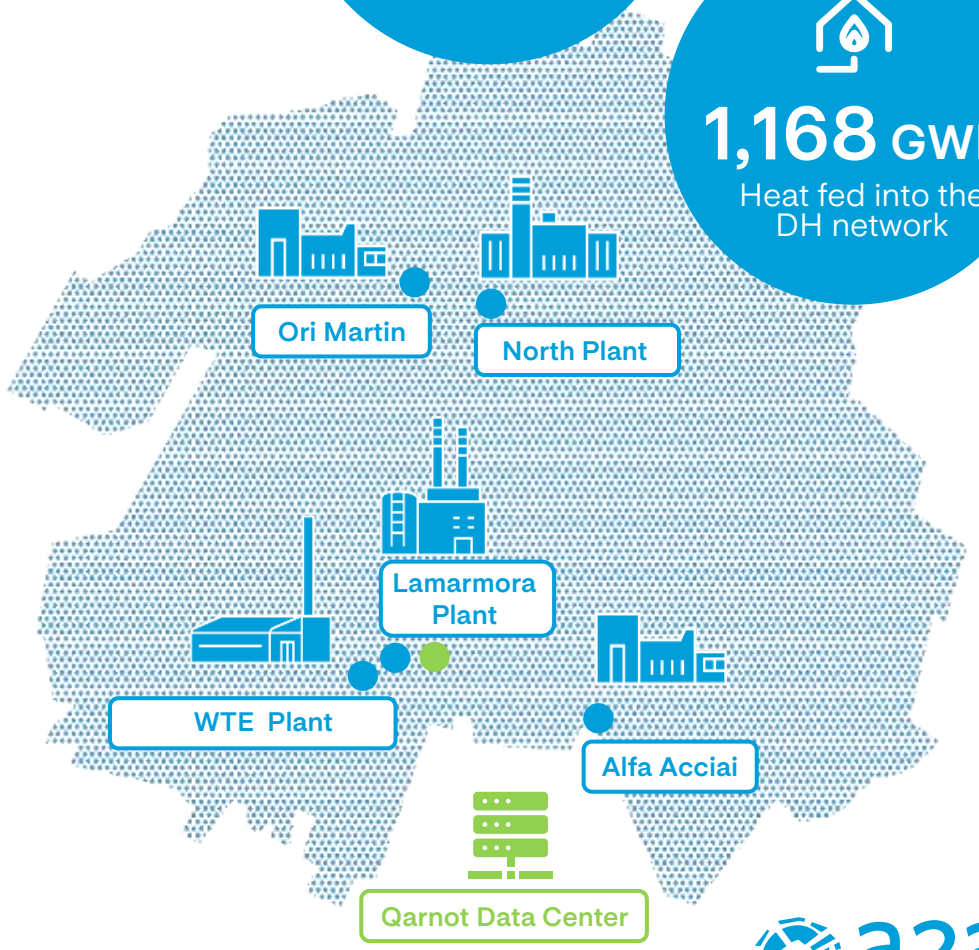
684 Km
DH network

179k
Inhabitants eq. served

917k Tons
CO2 avoided/year

65.87
kg CO_2/MWh
Unit emission factor
2023-24

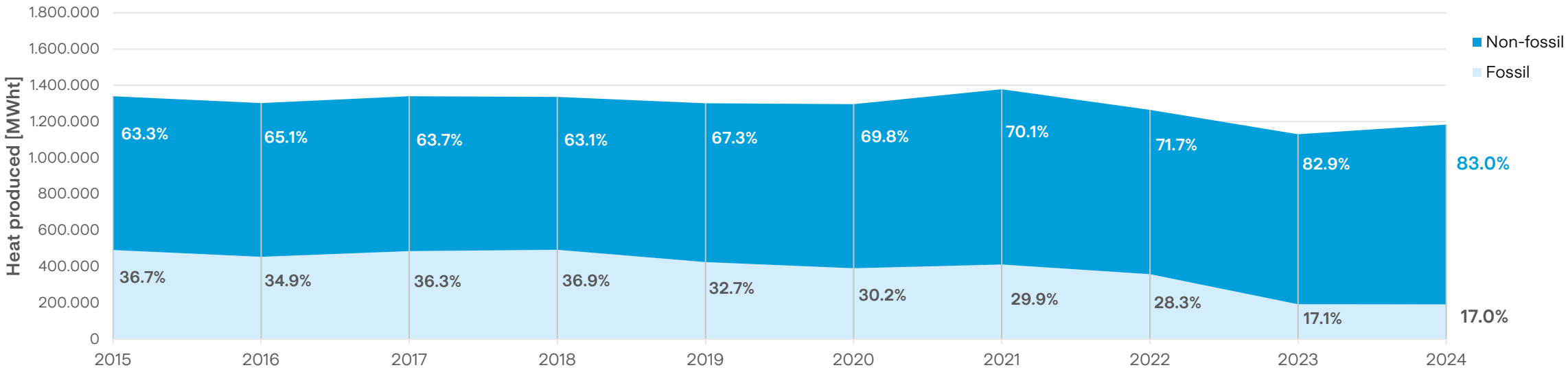
1,168 GWh
Heat fed into the
DH network



a2a LIFE COMPANY

District heating in Brescia

From 1972 to today: an ongoing improvement



Ori Martin Recovery

Lamarmora Heat Storage

Stop Use Coal

North Plant Heat Storages

Alfa Acciai Recovery

WTE Flue Gas Condensation system

a2a LIFE COMPANY

Brescia DH system enables further decarbonization

LAMARMORA PLANT STORAGE

5,000 m^3 + 2x1,000 m^3

CONSTRUCTION TIME-LAPSE

NORTH PLANT STORAGE

2x2,500 m^3

5k
Families decarbonized

WTE FLUE GAS CONDENSATION

60 MWt

12.5k
Families decarbonized

a2a LIFE COMPANY

Ongoing evolution of our networks

DH Network development

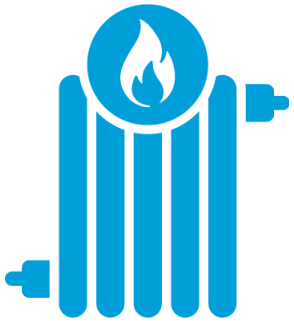
Network extension in existing districts, development in new areas and urban regeneration

District cooling

From thermal to cooling energy thanks to absorption chillers

Heat storages

New storages connected to the network to store the heat produced and make it available when needed



Integration of renewable sources

Increasing weight of RES (e.g. geothermal) with progressive reduction of fossil fuel usage

Phase-out of private boilers

Ongoing connections of new customers (>50 MW/y), with subsequent phase-out of private gas boilers

Heat recovery from third parties

Heat recovery from the territory (steelworks and data centers) as a production source for DH

DC «NEW ERA» in Italy

Data-intensive services require increasing data center capacity

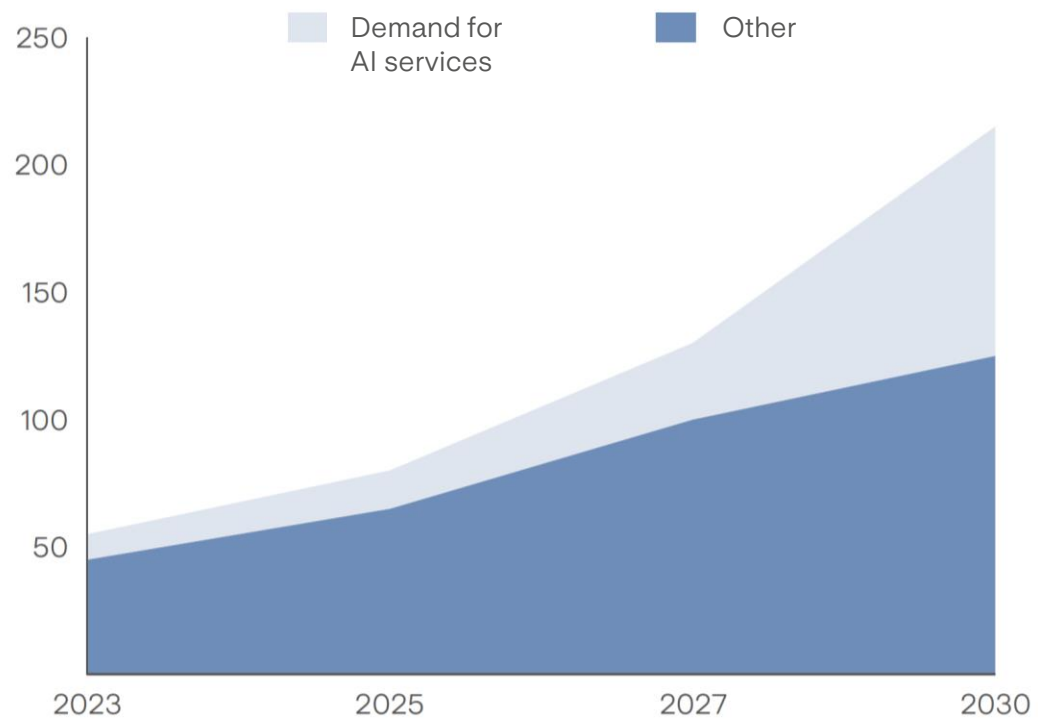
What is a data center

Infrastructure
A physical building or facility in which **computers and their hardware equipment are stored**

Data
IT infrastructure **processes, stores and manages** data associated with applications and services provided to customers

Centralized
Businesses use data centers to **locate IT assets in a central** location and manage costs effectively

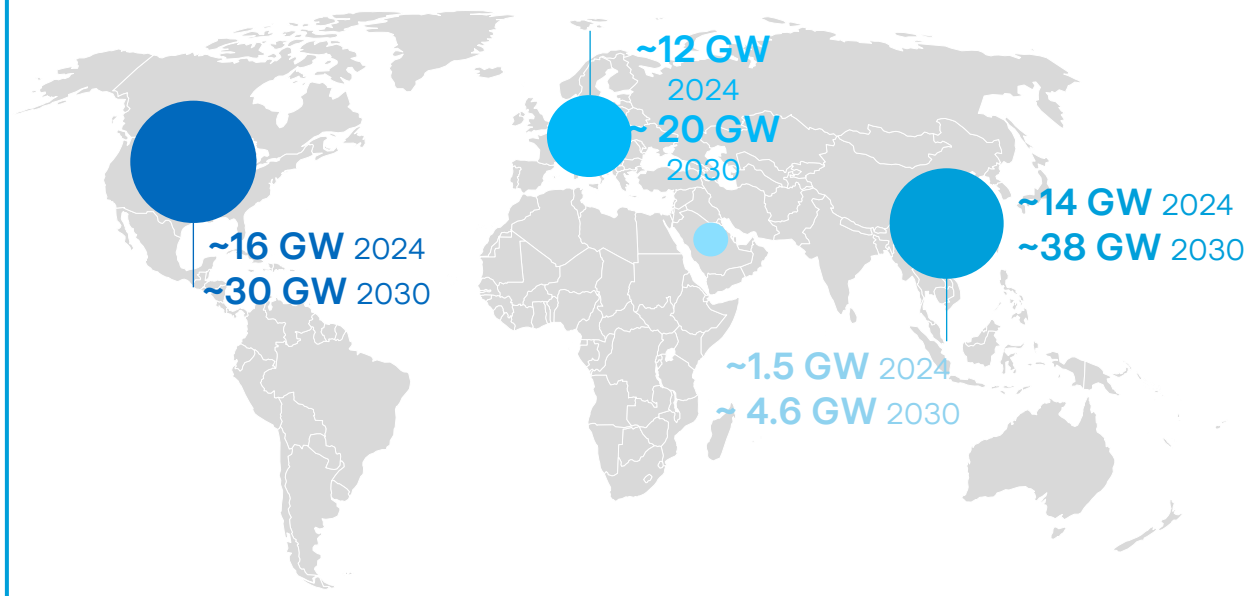
Data Center global demand | GW



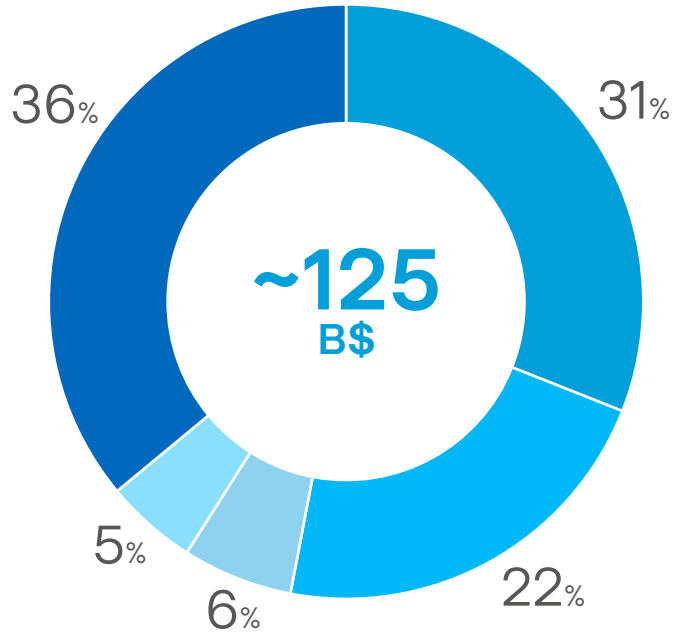
Source: McKinsey & Co, 2024

Europe has ~20% of the turnover in the data center market

Data Center capacity by continent | GW



Market share by continent | Revenue %, 2024

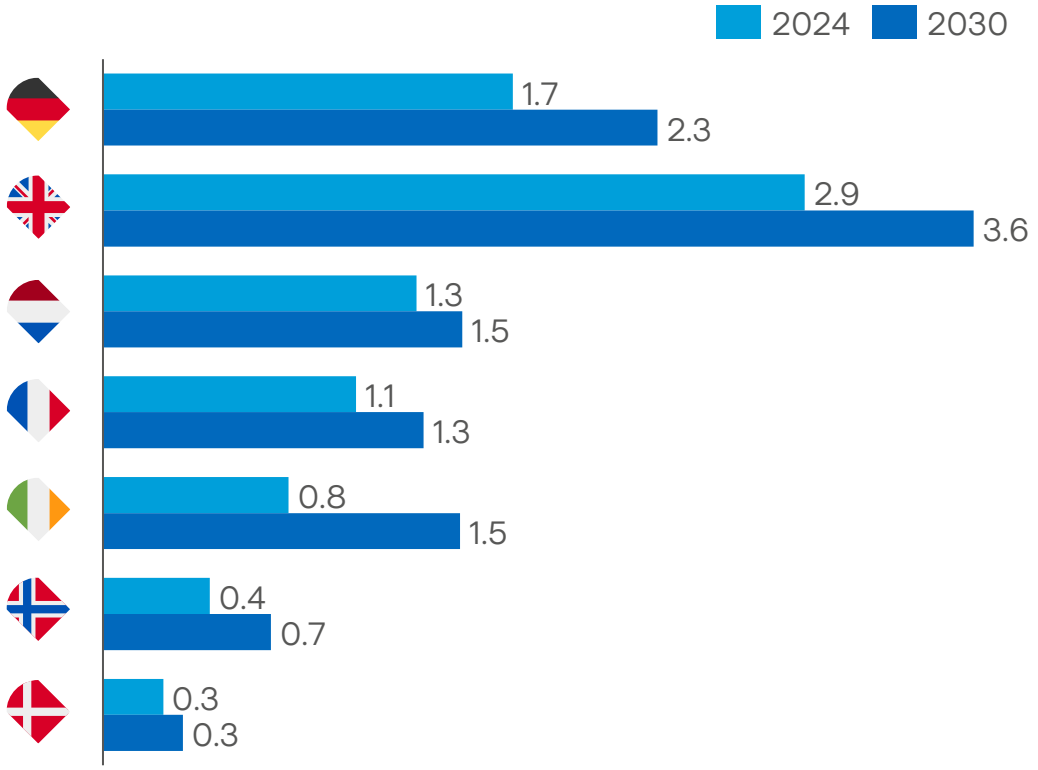


North America | Eastern Asia | Europe | South America | Middle East - Africa

Sources: Mordor Intelligence; Precedent Research

The development of data centers has historically been concentrated in northern Europe

Installed capacity by country | GW, 2024 vs 2030



Installed power for main hubs | MW, 2024

F	rankfurt	~900
L	ondon	~1,000
A	msterdam	~600
P	aris	~500
D	ublin	~300

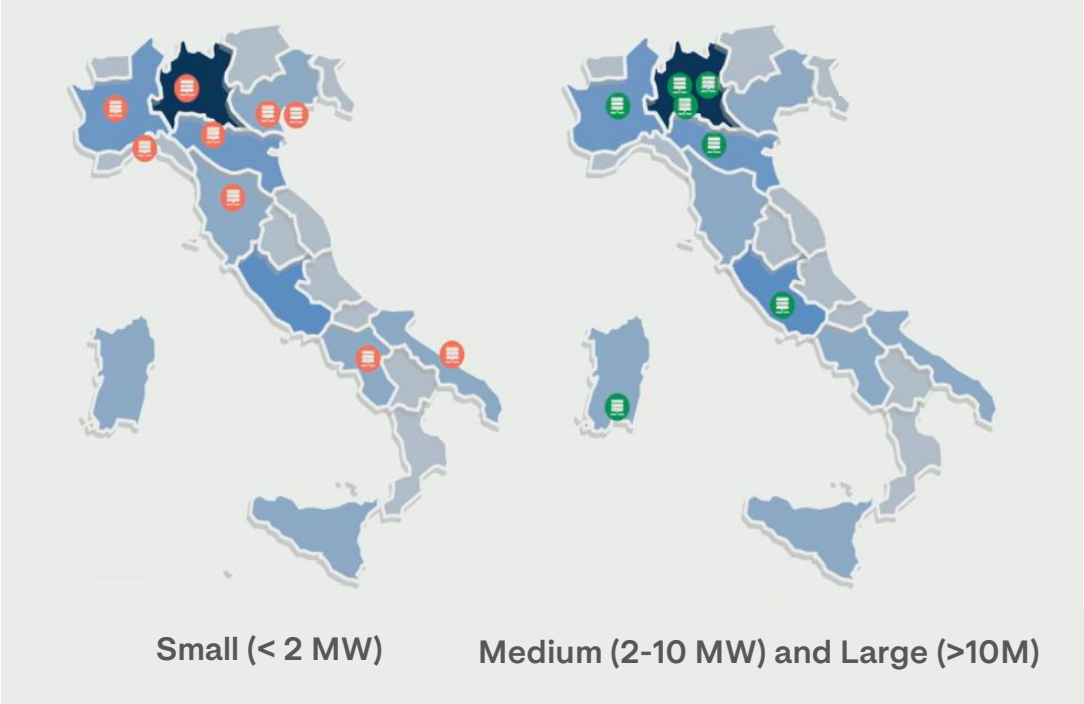
Limitations related to connections, energy consumption, and land availability are **slowing down the development of new data centers in FLAP-D regions**

Source: Mordor Intelligence, 2024

District heating and data centers

What is happening in Italy and Lombardy?

New Data Center openings in Italy (2021-2024)



Data Centers in Lombardy

318 MW

58 active DC in 2024

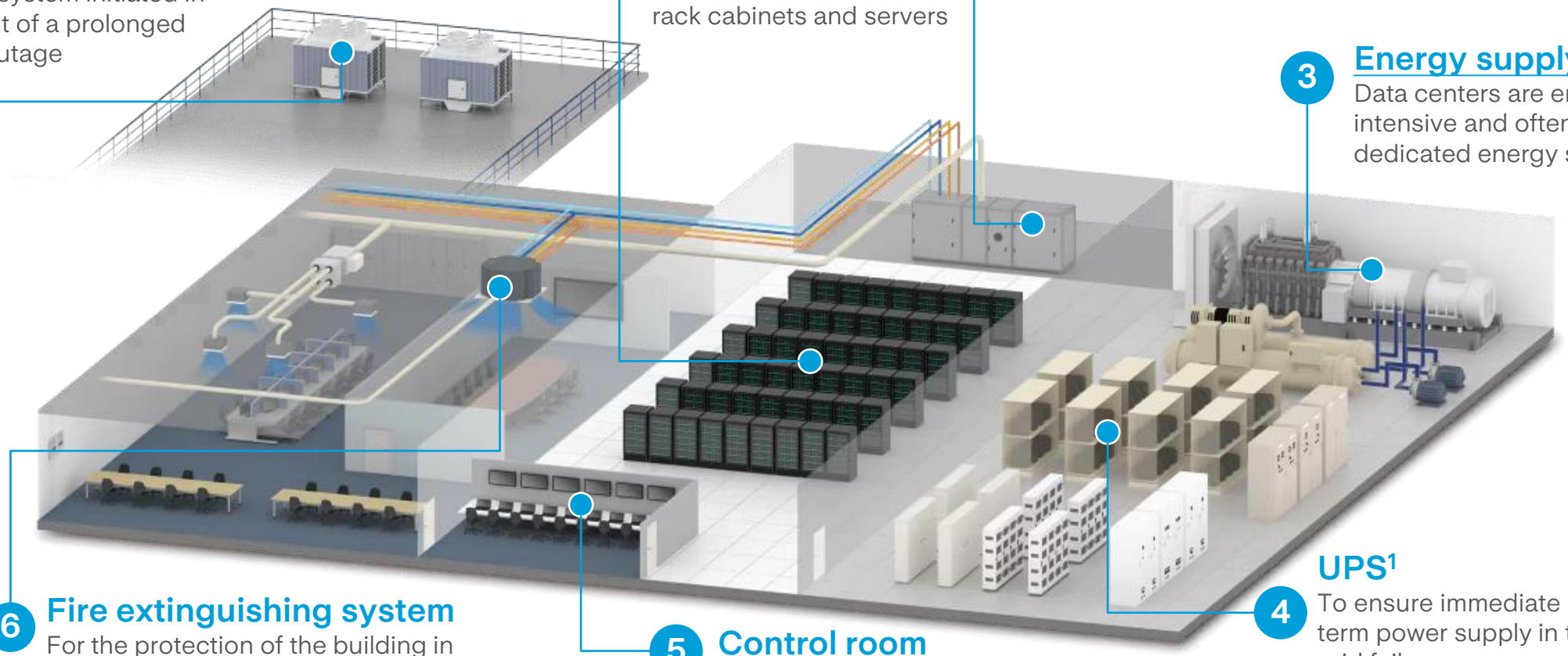
25 players of which 22 in the Milan area

2023-2026E cum. **Capex between €8-12 Bn**

Terna has received 30 GW of connection requests in Milan for new Data Centers by 2030

Source: Politecnico di Milano – dip. ing. management, TEHA-A2A study "L'Italia dei Data Center", September 2025

Sections of a data center



7 Backup power unit
Backup system initiated in the event of a prolonged power outage

1 Server room
Physical space in the building used to house rack cabinets and servers

2 Conditioning
System to maintain temperatures and humidity suitable for operation of servers

3 Energy supply
Data centers are energy-intensive and often require dedicated energy systems

4 UPS[1]
To ensure immediate but short-term power supply in the event of grid failures

5 Control room
Space used for the control and management of building parameters

6 Fire extinguishing system
For the protection of the building in the event of fire

Fonte: IDA – Italian Datacenter Association; Osservatorio Data Center POLIMI
Note: (1) Uninterruptible Power Supply

a2a LIFE COMPANY

EU sets data centre energy efficiency targets

Power Usage Effectiveness

PUE =

$$\frac{\text{Total Facility Energy}}{\text{IT Equipment Energy}}$$

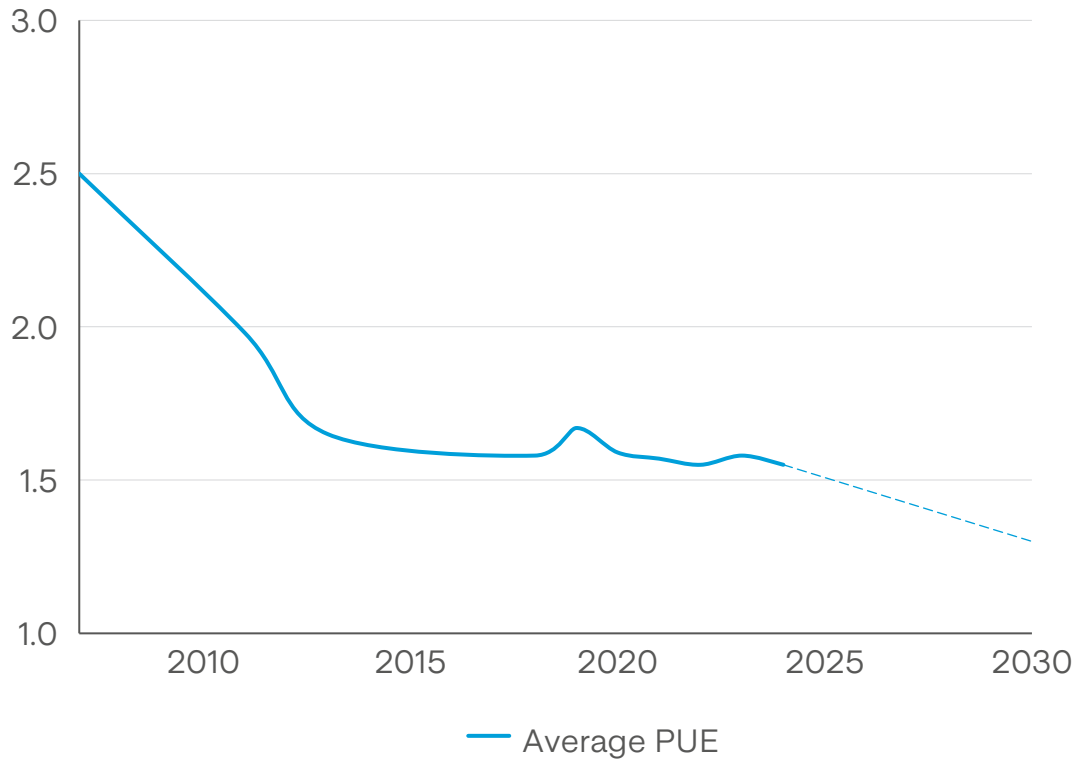
PUE = 1

100% efficiency.
All the energy consumed powers the server room

EU Green Deal | Climate Neutral Data Center Pact

Location	PUE Target	Compliant by
"Cool" countries[1]	1.3 or less	**2025** New data centers **2030** Existing Data Centers
"Warm" countries[2]	1.4 or less	

Medium PUE | Historical and prospective to 2030

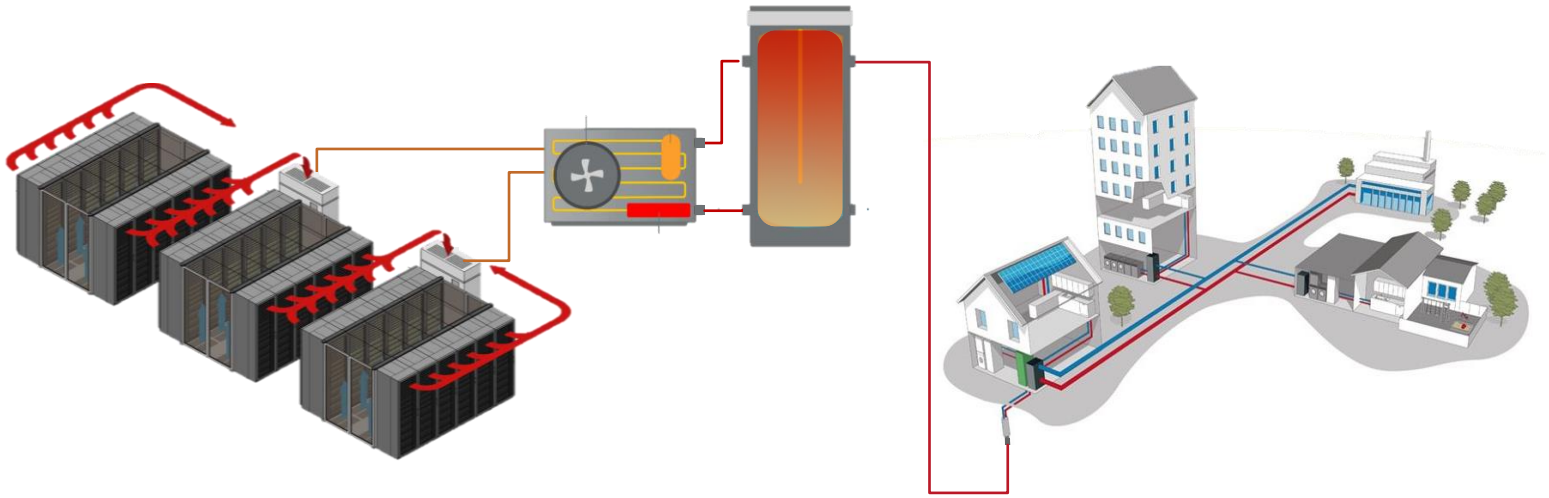


Sources: Climate Neutral Data Center Pact; Statista, 2024
Notes: (1) Cool climates: cooling degree day measurement of≤ 49.99; (2) Warm climates: cooling degree day measurement of ≥ 50.00

a2a LIFE COMPANY

Data Center Heat Can Power DH A2A Network

Heat recovery	Heat Pump	DH Network
*Heat is **captured from the data center server room***	*A heat pump is **used to bring it to a suitable temperature***	*The recovered heat is **fed into the** district heating network*



In the presence of a district heating network, A2A can:

- **Recover heat** to feed the grid
- **Reduce data center power consumption** for cooling[2]

DH A2A Network

A2A holds **over 30% of the market** in terms of district heating volume in Italy[1]

Notes: (1) first Italian operator for district heating volumetry according to AIRU estimates; (2) Guidelines to facilitate the approval process of data centers with heat recovery are being evaluated

A2A will recover the heat produced by Qarnot datacenters

A win-win collaboration for A2A, Qarnot and the environment

Partnership between A2A and Qarnot*

- **Qarnot** will implement its advanced data center facility at the Lamarmora thermal power plant
- **A2A** will commit to recovering the otherwise lost heat that these facilities produce.

Qarnot 1 Pilot Project

100 kWt

800 MWh/year

Installation of a **Prototype Data Center**: the heat will be recovered on the district heating and used to preheat the network replenishment.

- Location: inside containers in the disused area of the former evaporative tower;
- **Plant in operation since June 2025**

Qarnot 2 Pilot Project

1.8 MWt

16 GWh/year

Installation of a **Data Center**: heat recovery will take place thanks to heat pumps.

- Location: in the disused section of the plant, formerly coal storage;
- **Work progress**: preliminary design carried out by A2A, request for access to European funding filed by Qarnot;

*Qarnot develops modules (QBx) with liquid-cooled processors, which consume energy and produce large amounts of heat.

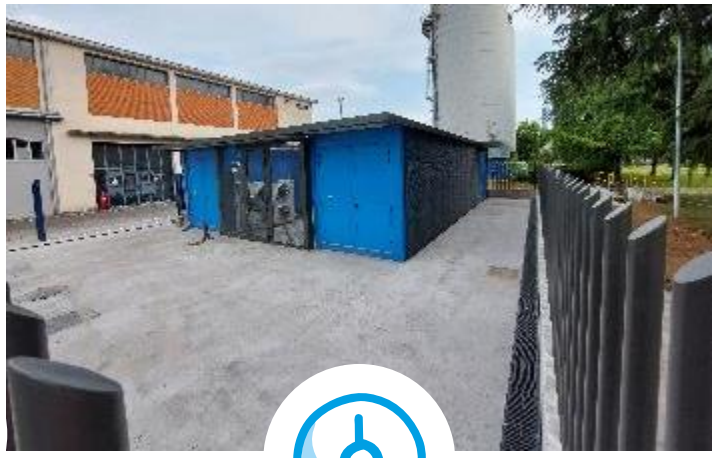
Data Center Qarnot 1

The construction site









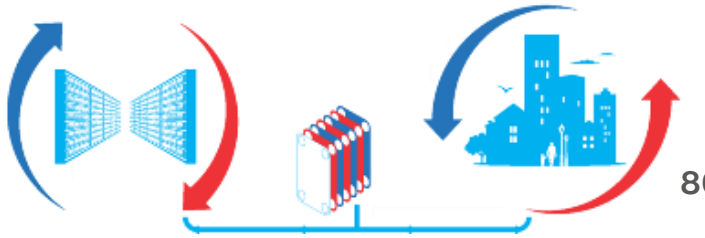

a2a LIFE COMPANY

Data Center Qarnot 1

Waste heat recovery

Electricity

Data center



Data

High Performance Computing

Heat
800 MWht/year

District heating of Brescia

*We are a **Life Company**:*

we put life at the heart of everything that we do, for us and future generations.

*Our technology and our infrastructures are at the service of **people** and of the protection of **nature**, so we work every day to **regenerate** the potential of every resource.*

*We promote energy from renewable sources, and we accelerate **decarbonisation**, promoting **electrification of consumption**.*

We build a virtuous water cycle to save every drop.
*We turn waste into resources so that all waste can become new **material**, **energy** and **heat**.*

*Our **vision** looks **forward**.*

*We build our **future today**, acting, **consciously**.*

Contacts

A2A Investor Relations

E-mail: ir@a2a.it

Phone: +39 02 7720 3974

https://www.gruppoa2a.it/en/investors